

US009409210B2

# (12) United States Patent Berkhout et al.

## zer miour et un

#### (54) SEPARATION-APPARATUS

(75) Inventors: **Simon Peter Maria Berkhout**, Delft (NL); **Peter Carlo Rem**, Rijswijk (NL)

(142), Teter Carlo Rem, Rijswijk (142)

(73) Assignee: ADR TECHNOLOGY B.V., Rotterdam

(NL)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 607 days.

This patent is subject to a terminal dis-

claimer.

(21) Appl. No.: 12/936,058

(22) PCT Filed: Apr. 1, 2009

(86) PCT No.: PCT/NL2009/050165

§ 371 (c)(1),

(2), (4) Date: Dec. 10, 2010

(87) PCT Pub. No.: WO2009/123452

PCT Pub. Date: Oct. 8, 2009

(65) Prior Publication Data

US 2011/0084005 A1 Apr. 14, 2011

(30) Foreign Application Priority Data

Apr. 2, 2008 (NL) ...... 2001431

(51) **Int. Cl.** 

**B07C 5/00** (2006.01) **B07B 13/10** (2006.01)

(52) U.S. Cl.

CPC ...... *B07B 13/10* (2013.01)

(58) Field of Classification Search

CPC ..... B07B 13/00; B07B 13/10; B07B 13/003; B22C 5/06

USPC ........ 209/637, 638, 640, 642, 44.2, 639, 644 See application file for complete search history.

# (10) Patent No.:

US 9,409,210 B2

(45) **Date of Patent:** 

\*Aug. 9, 2016

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

2,095,385 A \* 10/1937 Heisserman ...... B22C 5/02

2,662,641 A 12/1953 Clark

(Continued)

#### FOREIGN PATENT DOCUMENTS

CN 1895796 A 1/2007 CN 201482560 U 5/2010

(Continued)

#### OTHER PUBLICATIONS

International Preliminary Report on Patentability dated Aug. 23, 2010 from PCT/NL2009/050165.

(Continued)

Primary Examiner — Joseph C Rodriguez

Assistant Examiner — Kalyanavenkateshware Kumar
(74) Attorney, Agent, or Firm — Swanson & Bratschun,
L.L.C.

#### (57) ABSTRACT

The invention relates to a separation-apparatus for separating from a particle-stream at least a first fraction with particles of a first group of dimensions, and a second fraction with particles of a second group of dimensions, comprising an infeed-device for the particle-stream, a rotatable drum having at its circumference plates, each plate having a radially extending hitting surface for the particles, at least a first receiving area proximal to the drum for receipt therein of particles of the first fraction, and at least a second receiving area distant from the drum for receipt therein of particles of the second fraction, wherein the apparatus has a housing so as to protect the particles from outside weather-conditions, allowing that the particles of the particle-stream to be processed by said apparatus have dimensions in the range 0-15 mm.

### 14 Claims, 3 Drawing Sheets

